REMARKS

Claims 1-10, 12-14, 16-28, 30-41 and 43-63 are pending herein.

1. The PTO noted that the numbering of claims is not in accordance with 37 C.F.R. §1.126. It is unclear in the Office Action whether the PTO requests Applicant to retain the original mis-numbered claims, or whether to refer to properly numbered claims. However, it appears that the Office Action makes reference to elected claims 1-41 and linking claims 1, 42 and 64, that is, refers to properly re-numbered claims. In light of the foregoing, the present claims herein are presented herein in a corrected renumbered format.

2. The drawings were objected to due to labeling of two different elements with reference numeral "14." Applicant has attended to this objection by providing a replacement FIG. 1 enclosed herewith.

3. Claim 15 was objected to under 37 C.F.R. §1.75(c), and claim 29 was rejected under 35 U.S.C. §112, second paragraph. The cancellation of those claims herein attends to these issues.

4. Claims 1, 11, 15, 26-35, 38 and 41 were rejected under §102(e)/§103 over Savvides et al. In addition, claims 1, 11-15, 23-25, 38, 40 and 41 were rejected over Savvides et al. in view Do et al. and Hammond I. Still further, claims 2-6 were rejected over the foregoing references in further view of Ebe et al., claim 7 was further rejected in further view of Jacobson et al, claims 8-10, 16-2 and 39 were rejected in further view of Muller, Wakamoto, and Bischer et al., and claims 29, 36 and 37 are rejected in further view of Wahlin. Applicant respectfully traverses these rejections for the following reasons.

The claimed invention is drawn to a tape manufacturing system for coating at least one tape substrate, the tape manufacturing system comprising a tape translation mechanism including feeder and take-up spools for feeding the at least one substrate through a deposition zone of a deposition chamber, at least two electron beam (e-beam) deposition sources in the deposition chamber, and at least one assist source in the deposition chamber. As recited, the at least two e-beam deposition sources are positioned to be arranged serially so as to create an elongated coating deposition zone along a length of the substrate, and notably, the e-beam deposition sources are comprised of in-process repairable e-beam deposition sources. In short, claim 1 has been amended to incorporate features of claim 11 and features from original claim 42 (now canceled). In this respect, the claimed invention is particularly drawn to a manufacturing system utilizing a spool-to-spool translation mechanism for continuous coating, utilizing a plurality of e-beam deposition sources to create an elongated deposition zone, wherein the e-beam deposition sources are repairable. As described in paragraph 9 of the present specification, this configuration is particularly advantageous in that use of repairable e-beam deposition sources permits creation of coatings having a high level of integrity over extended lengths, and advantageously function to maintain extended length deposition in an economical process.

The primary reference, Savvides et al., fails to disclose (or even remotely suggest) such a tape manufacturing system incorporating in-process repairable e-beam deposition sources. The numerous secondary references fail to overcome the deficiency of Savvides et al. Accordingly, reconsideration and withdrawal of the §102/§103 rejections based on Savvides et al. and multiple secondary references are respectfully requested.

5. Claims 1-6 and 23-41 were rejected under §103 over Hammond I in view of Furukawa et al., Murakami et al., and Hammond II. In addition, claims 2-7 and 23-35 were rejected in further view of Jacobson et al. Further, claims 8-22 and 39 were further rejected under §103 in further view of Muller, Wakamoto and Bischer et al. These rejections are respectfully traversed for the following reasons.

In a similar manner as noted above with respect to Savvides et al., Hammond I fails to teach or suggest a tape manufacturing system incorporating in-process repairable e-beam deposition sources, and the secondary references fail to overcome this deficiency. Accordingly, reconsideration and withdrawal of the §103 rejections based upon Hammond I in view of multiple secondary references are respectfully requested.

6. Claim 42 was rejected under §102(b) over Nakatani or Tsukamoto. This rejection is respectfully traversed for the following reasons.

As noted above, portions of claim 42 drawn to recitation of in-process repairable e-beam deposition sources, have been incorporated into claim 1. Nakatani and Tsukamoto fail to disclose a tape-manufacturing system incorporating a tape translation mechanism, at least two e-beam deposition sources, and at least one assist source. Accordingly, withdrawal of the §102 rejection over Nakatani and Tsukamoto are respectfully requested.

7. Claims 42 and 64 were rejected under §103 in view of Hammond I in view of Nakatani or Tsukamoto. This rejection is respectfully traversed for the following reasons.

Hammond I teaches a process in which a buffer layer is formed using IBAD which incorporates an ion source and a buffer deposition source. However, Hammond I, even in view of the secondary references Nakatani and Tsukamoto, fails to disclose a process incorporating a tape translation system as claimed, at least two e-beam deposition sources arranged in series, each of which is in-process repairable. That is, at best, the secondary references suggest that the buffer deposition source of Hammond I may be modified to be in-line repairable. However, the references fail to teach or suggest a system incorporating a plurality of e-beam deposition sources arranged in series. Applicant emphasizes that the in-line repairability in the context of the claimed extended length deposition process is of notable consequence, resulting in creation of coatings having high integrity over extended lengths as detailed above with respect to the rejections based upon Savvides et al.

For at least the foregoing reasons in view of the amendments to the present claims, reconsideration and withdrawal of the §103 rejection over Hammond I in view of Nakatani and Tsukamoto are respectfully requested.

8. Claims 1-41 were rejected under §103 over Selvamanickam I, II, III and/or IV in view of Savvides et al., Do et al., Hammond I, and Hammond II. Applicant submits that this rejection is deficient for the reasons advanced above. The cited prior art fails to disclose or suggest a tape-manufacturing system incorporating, among other features, a plurality of e-beam deposition sources arranged in series, the deposition sources being in-line repairable. To the extent that the PTO continues to rely upon the Selvamanickam references, Applicant will submit a showing that the references disqualified under 35 U.S.C. §103(c).

Applicant respectfully submits that the present application is now in condition for allowance. Accordingly, the Examiner is requested to issue a Notice of Allowance for all pending claims.

Should the Examiner deem that any further action by the Applicant would be desirable for placing this application in even better condition for issue, the Examiner is requested to contact Applicant's undersigned attorney at the number listed below.

The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 50-2469.

Respectfully submitted,

Date 11/14/05

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Drawing Amendments:

Attached herewith is replacement sheet for FIG. 1.